

Specialists in plastics and tooling technology

Gebr. Schwarz GmbH in Rottweil-Neukirch is a state-of-the-art technology company in the field of plastics and tooling technology. Founded in 1966, the company today stands for precise, sophisticated and innovative plastics system solutions, both nationally and internationally, with around 200 employees. The company's philosophy of manufacturing innovative complete plastic solutions according to individual requirements is made possible by involving all partners involved in the process.

At the limit of what is technically feasible

Combined with innovative thinking, flexibility and technical know-how, Gebr. Schwarz GmbH thus ensures its joint success. The company is a supplier of individual, modular building blocks as well as complete plastic solutions. Whether conception, project planning, injection molds, plastic injection molding parts, component assembly or final assembly - you get everything from a single source.

PRODUCTS

Gebr. Schwarz GmbH develops innovative plastics solutions for the fields of measurement and electrical engineering, sensor technology, healthcare, environmental and energy technology, and the automotive sector. The basis for this is methodological expertise, many years of plastics know-how, quality systems and state-of-the-art EDP systems in the company.



Products from the health care sector
Picture source: Gebr. Schwarz GmbH

COMPRESSED AIR IN THE PLASTICS INDUSTRY

The company in Rottweil uses air compressors in the production of complete plastic solutions. Compressed air is used here as process air for the operation of robot, assembly and measuring systems.



„Economical compressed air & sustainability“ project

With maximum availability, around 2,053,000 m³ of compressed air are generated and provided in the right quality at our customer Gebr. Schwarz GmbH. This places high demands on the compressed air and treatment in the company. In order to make production processes even more efficient, a future-proof and efficient compressed air supply is essential at the site in Rottweil. The company is aware of its responsibility towards future generations and the environment. Therefore, sustainable investments are made at the site to optimize the plant as well as to use the necessary energy as efficiently as possible. The focus here is also on recovering waste heat for heating purposes.

In order to sustainably reduce the energy requirement, the pressure level was lowered by over 1 bar. For this purpose, measurements and analyses were carried out in advance and key figures were calculated. (Compressed air consumption measurement) The employees of FILCOM and the team of Gebr. Schwarz GmbH were in close contact and used their knowledge of compressed air technology as well as mechanical engineering in a targeted manner to also prepare the end users for the new compressed air station accordingly. The interaction of all measures resulting from the analysis were implemented to achieve a particularly high level of sustainability. In the compressed air station, the compressors that were just sufficient were also replaced and converted to highly efficient compressors with minimal redundancy. With short response times, FILCOM guarantees maximum reliability for the customer. The sustainability of this partnership concept conserves resources and supports the redundancy concept at Gebr. Schwarz.

New compressed air station for maximum reliability

Gebr. Schwarz GmbH initially started the new compressed air station project in 2021 together with SEMPACT Energieberatung. Due to the various inquiries to suppliers, FILCOM was initially shortlisted and was able to convince with its know-how and a concept based on supply security and sustainability.

Today, screw compressors from KAESER supply the production process at Gebr. Schwarz with compressed air. The compressors of the ASD series consistently implement the aforementioned customer requirements in operational practice. They use energy sparingly, are quiet, require little maintenance, operate reliably and deliver even better compressed air quality.

Because, as a user, Gebr. Schwarz GmbH expects its compressed air supply to be, above all, highly economical and reliable. This sounds simple, but these properties are influenced by a wide variety of factors. For example, over the lifetime of a compressor, energy costs add up to many times the cost of energy. However, by using **KAESER screw compressors with Sigma Control 2**, 72,000 kWh of electricity could be saved. This corresponds to electricity costs of € 17,000 / year.



View of the KAESER compressed air station at Gebr. Schwarz GmbH
Picture source: Gebr. Schwarz GmbH

SMALL THING - BIG EFFECT

A pressure maintaining valve is essential for a sustainable, qualitative compressed air supply. During shutdown or operational standstill, this valve is actuated to reduce pressure losses in the company. When the compressed air network is restarted, the pressure maintenance system protects the high-quality treatment from overload due to excessive compressed air speed and increasingly ensures that the compressed air tanks are operated in accordance with technical regulations during operation.

The compressed air reservoir - often underestimated component

The compressed air reservoir used at Gebr. Schwarz GmbH fulfills important tasks in the compressed air station as a storage and buffer medium. By reducing the overall pressure level, it significantly balances the usable buffer volume and thus ensures lower load changes of the compressors.

SECURING ECONOMIC EFFICIENCY IN THE LONG TERM

Gebr. Schwarz has successfully implemented its „Economic Compressed Air“ project together with FILCOM GmbH. By using a heat recovery system, energy that has already been paid for at Gebr. Schwarz can be used sensibly a second time for heating purposes. It may seem unbelievable, but it is a fact that 100% of the energy supplied to a compressor is converted into heat. Most of the energy used and usable as heat (up to 76%) is found in the cooling medium in fluid-injected compressors. An insulated heating line ensured maximum energy savings. Here, the equivalent of **6,600 liters of heating oil** as well as **heating oil costs of € 10,000 could be saved and CO2 emissions reduced by 38 t / year.**

INFO!

38 t CO2 eq corresponds to: 260,000 km by car (diesel) or 2,600 trips from Rottweil to Stuttgart or 6 trips around the globe!

EXPECTATIONS MET

The compressed air station was commissioned in 2021 together with FILCOM GmbH: „The commissioning as well as the subsequent support by FILCOM GmbH was carried out quickly, cleanly and competently,“ praises Uwe Schwarz - Sustainability Management Gebr. Schwarz GmbH. The economic consideration clearly shows that the promise in terms of cost efficiency has clearly been fulfilled. This was also verified by SEMPACT AG -Technische Energieberatung and confirmed accordingly. Electricity consumption was reduced by 26% and 38 t of CO2 were saved. Uwe Schwarz is satisfied that the compressed air required for numerous processes is now available in the expected quality and with maximum reliability.